

BIOLOGICAL OPINION
of the
U.S. FISH AND WILDLIFE SERVICE
for
ROUTINE MILITARY TRAINING AND TRANSFORMATION
of the
2ND BRIGADE 25TH INFANTRY DIVISION (Light)
U.S. ARMY INSTALLATIONS
ISLAND OF HAWAII



Haplostachya haplostachya

December 23, 2003
(1-2-2003-F-02)

EXHIBIT 9

0024083

Colonel David L. Anderson

109

unauthorized personnel due to fired munitions hazards. Fires are not controlled in the Impact Area (due to the presence of unexploded ordinance) and uncontrolled fires may potentially spread from the Impact Area to other areas of the installation. Because the Impact Area is unsafe for human activity, surveys for listed species cannot be conducted, nor can it be accurately determined which species will be lost, or the magnitude of the loss. This area may be a source of pests for other parts of the installation due to the inability to carry out natural resource measures such as invasive plant control, ungulate removal, or small mammal trapping. The Impact Area effectively subdivides PTA into an eastern and western section (see Figure 3). The loss of this large, central area fragments natural habitats for bats and listed plants thereby diminishing ranges of species and genetic transfer among populations, subpopulations, and individuals. The Service has determined that there is a high probability that any listed plant species or roosting habitat for the Hawaiian hoary bat within the Impact Area will be lost through time due to fire or direct impact of live-fire munitions. The historic and future loss of this habitat and occurrences of listed species is considered important.

The Transformation Biological Assessment attempted to address the issue of listed plants and habitat that may be within the Impact Area by compiling a community plant map with 24 plant vegetation types delineated from aerial photos (see Figure 20 in the Transformation Biological Assessment). However, this methodology gives only a prediction of species presence and relative abundance based on vegetation type. According to this hypothesis, there is a high probability that *Silene hawaiiensis*, *Hedyotis coriacea*, and *Asplenium fragile* var. *fragile* would be found within the Impact Area. In addition, two listed species, *Stenogyne angustifolia* and *Zanthoxylum hawaiiense*, were observed while conducting botanical surveys for the construction of the Battle Action Course and Anti-armor Live-fire Tracking Range. Therefore, we know some plant occurrences that will be permanently impacted, and we can predict that at a minimum, occurrences of at least three other plant species will be lost from fire or munition rounds.

Off-Road Maneuver Areas

We have also determined that native habitat for listed plants and bats will likely be destroyed in designated Stryker off-road maneuver areas (see Figure 6). Vehicular off-road maneuver activity can either directly crush the plant or indirectly affect the species by habitat degradation from soil compaction, dust and habitat fragmentation. We do not know the frequency, or number of Stryker vehicles, that will utilize the off-road maneuver areas either within the northern portion of PTA, or the Kearnuku Parcel, each year. It is our understanding that multiple Stryker vehicles will be driven in formations across any and all accessible land within these designated areas. Therefore, we determined that if there is a very high probability that off-road maneuver areas will be completely impacted over time. This loss of habitat also creates population and habitat fragmentation, essentially diminishing ranges of species and genetic transfer among individuals of a species. The Stryker maneuver areas are not off-limits to Natural Resources staff conducting management actions, however it would not be prudent to invest time and resources into these high-use training areas because it is likely that remaining native vegetation and listed species will be lost in the long term. The two plant species that will be permanently impacted by this activity are

Colonel David L. Anderson

110

Haplostachys haplostachya and *Silene hawaiiensis*. The loss of this habitat and occurrences of listed species is considered important. A more detailed analysis of these impacts shall follow in the species-specific effects section.

Indirect effects of off-road maneuvers is the creation of large plumes of dust (particularly in the Keanukū Parcel) and dust accumulation on adjacent habitats and species over time. See the discussion on dust below.

Construction Impacts

Nine construction projects are included as part of the action at PTA. Two of these projects, the Battle Action Course and the Anti-armor Live-fire Tracking Range, will result in the complete loss of several occurrences of listed plants and roosting habitat for the Hawaiian hoary bat. The project footprint for the Anti-armor Live-fire Tracking Range will impact several occurrences of *Silene hawaiiensis*. The Battle Action Course will impact one *Zanthoxylum hawaiiense*, and several occurrences of *Haplostachys haplostachya* and *Silene hawaiiensis*. Each of these species-specific impacts will be discussed in greater detail in the effects section. Overall, approximately 1,100 hectares (2,718 acres) of land will be impacted for the construction of these two training facilities (this includes conversion of existing training areas). The Service has determined these two construction projects have a very high probability of impacting all occurrences of listed plants within the project footprints and shrubland habitat for the Hawaiian hoary bat. The construction and training use of these two facilities is considered to be a permanent loss of species and habitat through time. The indirect effects associated with the construction of these nine projects include habitat fragmentation, edge effects, and dust production.

Fire

When assessing fire risk for PTA, the following elements were considered: fuel types, training activities, fire history, significant topographic barriers, buffers, defensible boundaries, and fire minimization and prevention. The threat of fire resulting from training exercises can range from low to very high, depending upon the location of the species or habitat in relation to the training action. Fires can also be started from non-training activities or accidental ignition such as catalytic converters, cigarettes, maintenance or construction equipment, or hunters. Fire is a considerable threat to native taxa and natural communities in Hawaii. Few native Hawaiian plants and animals are adapted to wildfires, and none have been found to be dependent on fire for survival. Consequently, most native plants and animals perish during fires with little subsequent recovery. Once a fire sweeps through native vegetation it allows for the intrusion of non-native, fire-adapted, invasive plants and prohibits regeneration of native plants. Each successive fire that reaches native shrubland or woodland forest reduces habitat for listed species, affects the moisture and canopy of the native habitat boundary, and increases the number of alien plants in areas of native vegetation. Invasive plant encroachment increases after a major disturbance event such as a fire and this secondary threat can have a significant effect to any threatened or endangered plant species not destroyed by the fire.

Final Environmental Impact Statement

Transformation of the 2nd Brigade, 25th Infantry Division (Light) to a Stryker Brigade Combat Team in Hawai'i

Prepared for
Department of the Army
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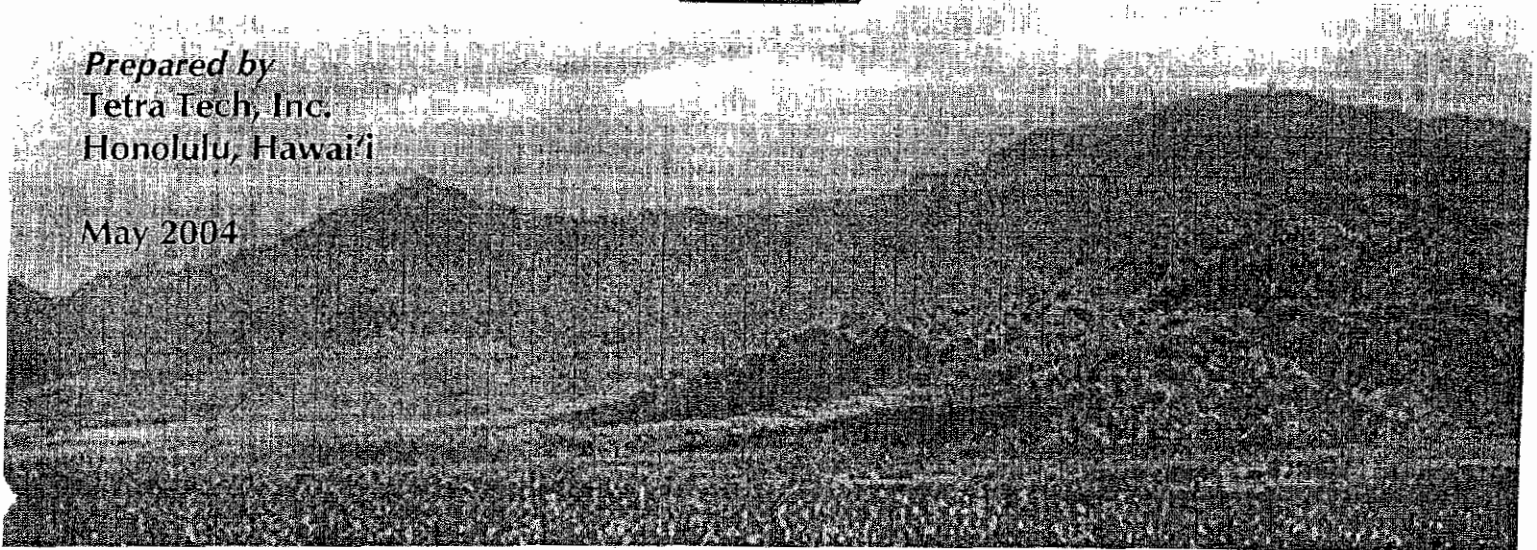
and

US Army Corps of Engineers
Honolulu Engineer District
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Prepared by
Tetra Tech, Inc.
Honolulu, Hawai'i

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Regulatory and Administrative Mitigation 3. The Army will evaluate archaeological sites within training areas related to SBCT. Sites determined to be eligible for the NRHP and sites pending evaluation will be identified and avoided through protective measures, to the full extent practicable. If it is not feasible to avoid identified archaeological sites or newly discovered sites, the Army will consult in accordance with the PA to determine the appropriate mitigation for the damage to the sites, such as data recovery or other mitigation measures. To address the accidental discovery of archaeological sites, human remains, or cultural items, the Army has developed an IDP as part of the PA.

Impact 4: Impacts on Areas of Traditional Importance. Potentially significant impacts on ATIs may occur at SBMR, DMR, and PTA.

Potential impacts related to construction of training facilities could include destroying or damaging ATIs, including shrines, archaeological sites, burials, or elements of Native Hawaiian cultural landscapes. Purchasing the SRAA at SBMR and the WPAA at PTA, and then using them for military training, could limit Native Hawaiian access to and use of sites on these parcels for traditional or religious purposes. Native Hawaiians consider range and training activities inappropriate and disrespectful uses of the land that disturb and change the character and feeling of spiritual places.

Construction of FTI antennas at SBMR, including on Mount Ka'ala, and at PTA may result in visual intrusion on cultural landscapes. Because some sites would require construction, they could have an adverse effect on the nature of the cultural landscape.

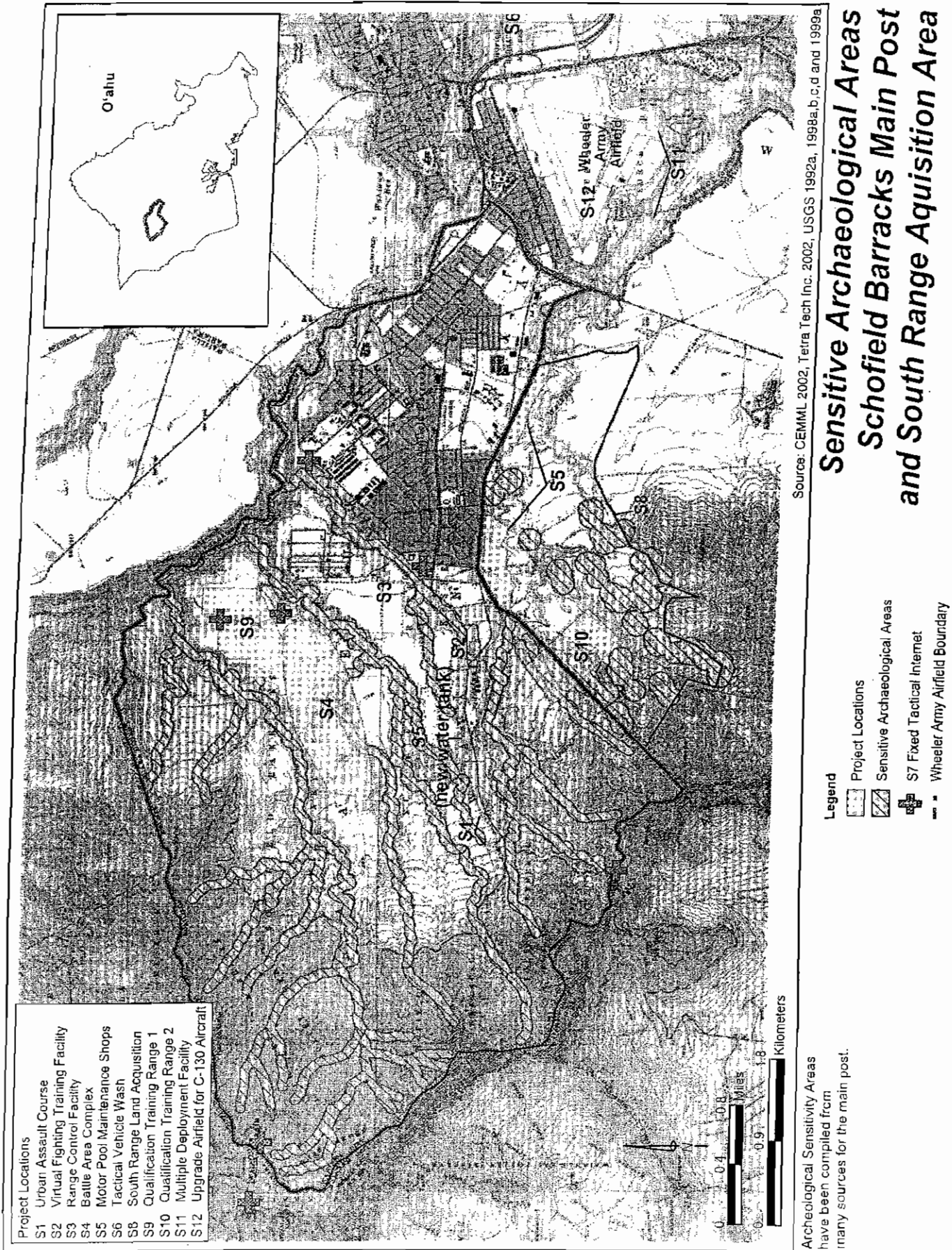
Activities relating to the construction of Dillingham Trail from DMR to SBMR could also result in significant impacts on such cultural properties; however, identified mitigations, including identification and avoidance, may reduce the severity of the impacts, but not to less than significant levels.

Regulatory and Administrative Mitigation 4. Facility construction or training area uses will be designed to avoid identified traditional places and limit visual impacts on TCPs by site location, design, and orientation, where feasible.

If avoiding identified TCPs or ATIs is not feasible because of interference with the military mission or risk to public safety, the Army will consult with the SHPO and Native Hawaiians, in accordance with the PA, to identify impacts and develop appropriate mitigation measures. Mitigation for impacts on the cultural landscape could include consulting with Native Hawaiians and using a cultural monitor during construction.

The Army will continue to provide Native Hawaiians with access to traditional religious and cultural properties, in accordance with AIRFA and Executive Order 13007, on a case-by-case basis. This access program will be expanded to include new land acquisitions.

The Army previously identified Native Hawaiian burial sites in the SBCT ROI. The Army completed notification and consultation procedures for these burial sites, in accordance with NAGPRA, and left these human remains in place. To address any impacts on any burial sites



**Sensitive Archaeological Areas
Schofield Barracks Main Post
and South Range Acquisition Area**

Oahu, Hawaii

Figure 5-42

Regulatory and Administrative Mitigation 1. Before construction, the Army will complete the evaluation of any archaeological sites within areas subject to range and facility construction. Sites determined to be eligible for the NRHP will be flagged for avoidance. The projects will be designed to avoid all eligible and unevaluated archaeological sites, to the full extent practicable. GIS and GPS information will be given to project designers and range control to ensure that sites are considered in project design. If it is not possible to avoid archaeological sites, the Army will consult in accordance with the PA to determine the appropriate mitigation for the damage to the sites, such as data recovery or other mitigation measures. To address the accidental discovery of archaeological sites, human remains, or cultural items, the Army has developed an IDP as part of the PA.

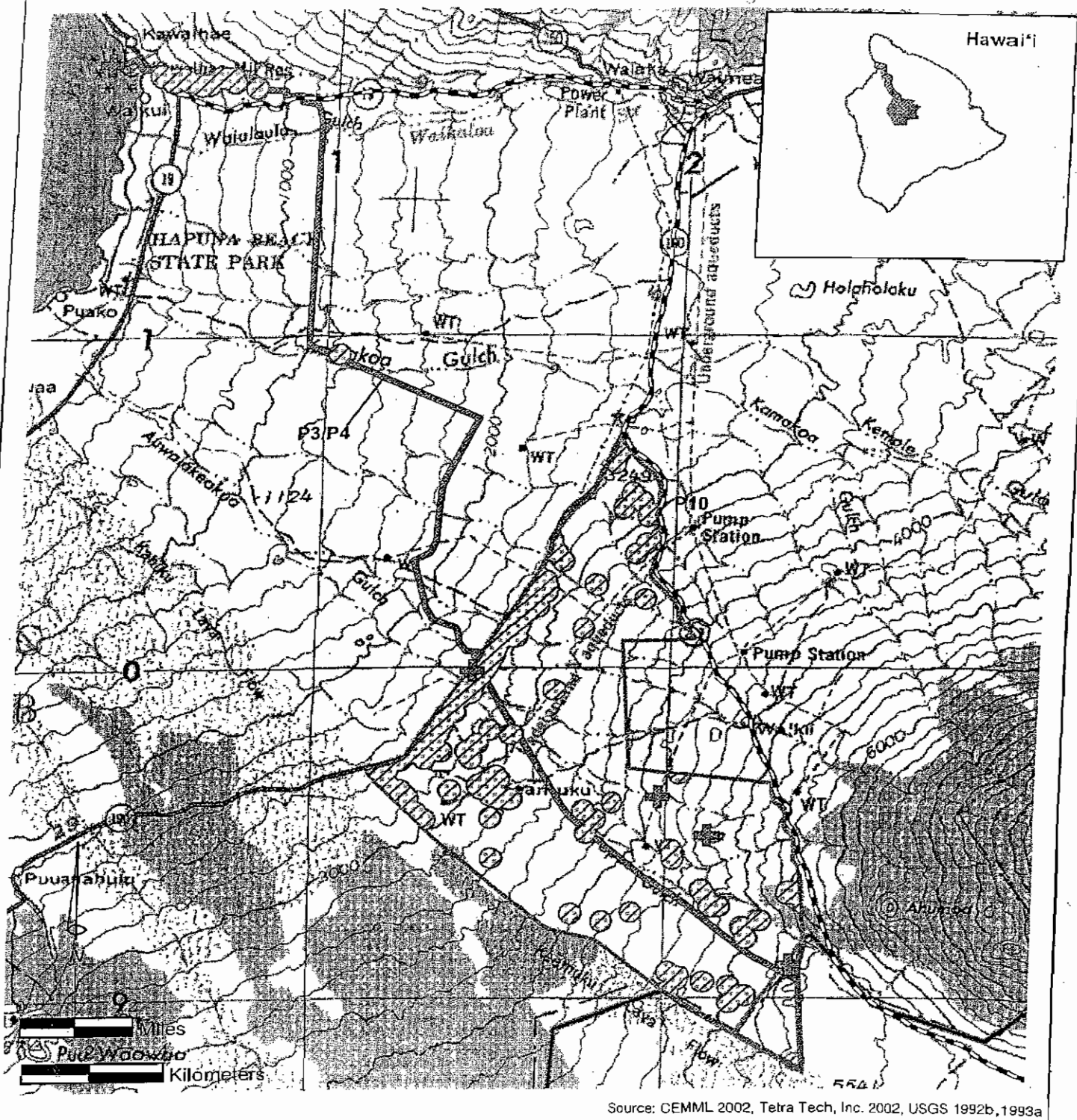
Impact 2: Impacts on Areas of Traditional Importance. SRP (2003) conducted a TCP survey, as defined in Section 3.11.2, at SBMR, including the associated ranges. Archaeological surveys of construction areas and the range areas may not have identified TCPs or places of traditional importance to Native Hawaiians, even though some archaeological sites may constitute an ATI. Activities relating to the construction of the BAX, UACTF, and QTR1, and the use of QTR2, could result in destruction or damage, or restrict access to previously unknown properties of traditional importance to Native Hawaiians. Native Hawaiians consider range and training activities inappropriate and disrespectful uses of the land that disturb and change the character and feeling of spiritual places.

Acquisition of the SRAA and its subsequent use for military training could interfere with Native Hawaiian access to and use of sites on the parcel for traditional or religious purposes. Oral testimony indicates there are ATIs on the property, and some of these resources qualify as TCPs. Converting the area to military training purposes could result in limited Native Hawaiian access to some sites and might result in inadvertent physical damage or destruction of the sites. In order to protect such resources, a survey of the proposed construction and range areas for TCPs or ATIs has been conducted via pedestrian survey, archival research, oral interviews, and site visits with knowledgeable Native Hawaiians. USARHAW is taking a proactive role in trying to identify ATIs through its community outreach programs and activities, and plans to continue with these activities. Two FTI antenna support structures will be placed on Mount Ka'ala and one near Kolekole Pass. While the proposed FTI antenna support structures have been located to avoid archaeological resources, these areas have been identified as important elements of the cultural landscape of Wai'anae Uka. While the Kolekole antenna would be erected on top of an existing antenna support structure, the Mount Ka'ala sites would require new construction and may be considered to have an adverse visual effect.

Noise impacts described in Section 5.6 of this chapter would not have an impact on potential ATIs at Mount Ka'ala and Kolekole Pass because the noise contour maps show no noise impacts in these areas, and access would be limited to times when no ordnance would be firing.

Construction of the UACTF is identified for an area near Kolekole Pass, on or adjacent to the Elou Cliff Trail, a traditional trail identified as a potential ATI. Previous reconnaissance

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Archaeological Sensitivity Areas at West PTA and PTA Trail

Island of Hawai'i, Hawai'i

Legend

- | | |
|---|-----------------------------------|
| Pōhakuloa Training Area Boundary | P10 Fixed Tactical Internet |
| 1010 Land Purchase Area | P3/P4 Pōhakuloa to Kawaihae Trail |
| P7 West Pōhakuloa Training Area Land Acquisition Area | Saddle Road |
| Sensitive Areas | Red Leg Trail |

Figure 8-39

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Eight sites are within the proposed AALFTR area. Site 18673 (an extensive lava tube system containing cultural features and materials) had been previously located within the project area during the survey along the Redleg Trail (Reinman and Pantaleo 1998b). The recent SBCT survey in the AALFTR area (Roberts et al. 2003) identified an additional four lava tube cave sites. All five lava tubes contained evidence of their use as shelters or temporary habitation areas, but in the Site 18673 lava tube, three upright stones were found on basalt ledges, suggesting that these may have been shrines. The other sites consist of two complexes of excavated pits and one lithic scatter. All sites are Native Hawaiian sites that have not been formally evaluated for the NRHP. A total of 17 sites may be affected by construction of the proposed BAX; none of these have been evaluated for eligibility for the NRHP. Site types include excavated pit complexes, a complex of lava tubes with associated trails and cairns, rock shelters, modified outcrops, rock piles, a stand-alone cairn, a lava tube, a lithic scatter, and an enclosure. Potential impacts include site destruction or damage from construction of BAX/AALFTR facilities.

Facility and range construction involves grubbing vegetation, softening the ground, grading site surfaces, excavating, and moving heavy construction equipment. All of these activities, particularly ground softening, would directly damage or destroy unidentified archaeological resources or would indirectly damage them by contributing to soil erosion. Cultural resources within lava tubes would be particularly subject to damage as a result of ground softening prior to construction of the BAX. The mitigation measures below will reduce the severity of the impact but not to less than significant levels. *Regulatory and Administrative Mitigation 2.* Before construction, the Army will evaluate any archaeological sites within areas subject to range and facility construction. Sites determined to be eligible for the NRHP will be flagged for avoidance. The projects will be designed to avoid all eligible and unevaluated archaeological sites, to the full extent practicable. GIS and GPS information will be given to project designers and range control to ensure sites are considered in project design. If it is not possible to avoid archaeological sites, the Army will consult in accordance with the PA to determine the appropriate mitigation for the damage to the sites, such as data recovery or other mitigation measures. To address the accidental discovery of archaeological sites, human remains, or cultural items, the Army has developed an IDP as part of the PA.

Impact 3: Impacts on archaeological resources from training activities. In addition to the 25 sites within the BAX and AALFTR project areas, 96 archaeological sites (both prehistoric and pre-military historic) have been located within the WPAA. Site types on the parcel include ahu, mounds and mound complexes, an enclosed excavated pit, rock piles, enclosures, partial enclosures (C-shapes), an enclosed platform, wall sections, wall-mound-terrace complexes, a petroglyph, a pictograph, a sheep-cattle station complex, and a historic road.

Training activities on PTA and the WPAA under the Proposed Action would result in increased access by ground troops into the training areas, resulting in possible impacts on archaeological sites, off-road vehicular movement by current force and Strykers, cleanup of unexploded ordnance, and subsurface excavations related to troop maneuvers (e.g., field fortifications and obstacle placement). Live-fire activities on PTA ranges could damage surface or subsurface resources from direct impacts of munitions or explosions, although such activities are directed toward established live-fire ordnance impact areas. Activities such

as ordnance removal, construction of field fortifications or defensive positions, and off-road vehicular movement could cause site destruction or damage directly or indirectly through soil erosion. As discussed in Section 8.9, soil erosion is expected to increase at PTA under the Proposed Action. Unrestricted Stryker maneuvering is identified as a potential source of damage to archaeological sites. This type of damage would be more likely in the WPAA than at the AAI, FTR or BAX, based on the Army's preliminary maneuverability maps for the installation and the dozens of archaeological sites located within the unrestricted maneuvering area. These sites would be at significant risk of damage from training exercises through direct and indirect effects of mounted maneuvers. The mitigation measures below will reduce the severity of the impact but not to less than significant levels.

Regulatory and Administrative Mitigation 3. The Army will evaluate archaeological sites within training areas related to SBCT. Sites determined to be eligible for the NRHP and sites pending evaluation will be identified and avoided through protective measures, to the full extent practicable. If avoidance of identified archaeological sites or newly discovered sites is not feasible, the Army will consult in accordance with the PA to determine the appropriate mitigation for the damage to the sites, such as data recovery or other mitigation measures. To address the accidental discovery of archaeological sites, human remains, or cultural items, the Army has developed an IDP as part of the PA.

Impact 4: Impacts on Areas of Traditional Importance. SRP (2002) is conducting a TCP survey at PTA to identify ATIs. As noted previously, evidence indicates the possible presence of ATIs, including burials in the ROI of PTA, although the survey did not identify any ATIs within the project areas.

There would be no noise impacts on ATIs at Mauna Kea because the noise analysis shown in Section 8.6 indicates that noise contours relating to ordnance use and construction under SBCT would not extend much beyond the PTA boundaries.

Conducting military training at the WPAA would limit access to the property. There are cultural resources of Native Hawaiian origin on the property, and it is possible that some of these resources constitute ATIs. Converting the use of the parcel to military training may also damage or destroy any unrecorded sites. Native Hawaiians consider range and training activities inappropriate and disrespectful uses of the land that disturb and change the character and feeling of spiritual places.

One FTI antenna will be placed on Mauna Loa, nine others will be located around PTA and the WPAA, and one more will be erected at Kawaihae. While the precise locations of the FTI sites will avoid archaeological resources, Mauna Loa has been identified as a particularly sacred element of the Native Hawaiian cultural landscape. While the antennas would be erected on top of existing support structures, the construction may be considered to have an adverse effect on the nature of the cultural landscape. ATIs and burials, if located within the area of construction activities or new training areas, would be at risk of damage or destruction as a result of the Proposed Action. Impacts could be caused by human presence in the area, physical disturbance from human or vehicle passage, or actual damage from